

All Regional Engineers

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Special Provision for Turf Reinforcement Mat

August 5, 2005

This special provision was developed by the Bureau of Design and Environment to provide an additional material option for erosion control.

This special provision should be used on all contracts requiring the use of turf reinforcement mats.

The districts should include the BDE Check Sheet marked with the applicable special provisions for the November 18, 2005 and subsequent lettings. The Project Development and Implementation Section will include a copy in the contract.

This special provision will be available on the transfer directory August 5, 2005.

80154m

TURF REINFORCEMENT MAT (BDE)

Effective: November 1, 2005

Revise Article 251.01 of the Standard Specifications to read:

“251.01 Description. This work shall consist of furnishing and placing mulch, erosion control blanket, or turf reinforcement mat over seeded areas.”

Add the following to Article 251.02 of the Standard Specifications:

“(h) Turf Reinforcement Mat 1081.10(h)”

Add the following to Article 251.06 of the Standard Specifications:

“(d) Turf Reinforcement Mat (TRM). The TRM shall be specifically manufactured for both temporary and permanent erosion control, revegetation, and the reduction of water velocities in ditches and overflows. TRM shall be installed according to the manufacturer’s recommendations.”

Revise Article 251.06 of the Standard Specifications to read:

“251.07 Method of Measurement. This work will be measured for payment as follows.

- (a) Contract Quantities. The requirement for use of contract quantities shall be according to Article 202.07(a).
- (b) Measured Quantities. Mulch Methods 1, 2, and 3 will be measured for payment in hectares (acres) of surface area mulched. Erosion control blanket, heavy duty erosion control blanket, and turf reinforcement mat will be measured for payment in place and the area computed in square meters (square yards).”

Revise Article 251.07 of the Standard Specifications to read:

“251.08 Basis of Payment. This work will be paid for at the contract unit price per hectare (acre) for MULCH, METHOD 1; MULCH, METHOD 2; or MULCH, METHOD 3; and at the contract unit price per square meter (square yard) for EROSION CONTROL BLANKET, HEAVY DUTY EROSION CONTROL BLANKET, or TURF REINFORCEMENT MAT.”

Add the following to Article 1081.10 of the Standard Specifications:

“(h) Turf Reinforcement Mat (TRM). The TRM shall be comprised of non-degradable, ultraviolet stabilized synthetic fibers, filaments, netting, and/or wire mesh processed into a three-dimensional reinforced mat. The mats may include degradable material to assist with vegetation establishment. Soil filled mats will not be allowed.

The TRM shall meet the following physical and performance properties:

Property	Value	Test Methods
Minimum Tensile Strength kN/m (lb/ft)	2.19 (150)	ASTM D 6818
UV Stability (Minimum % Tensile Retained)	80	ASTM D 4355 (1000 Hour Exposure)
Minimum Resiliency (% Thickness Retained)	80	ASTM D 6524
Allowable Shear Stress Pa (lb/sq ft) ^{1/}	384 (8)	ECTC approved test method and independent laboratory

1/ Minimum shear stress the TRM (fully vegetated) can sustain without physical damage or excess erosion (> 0.5 inch soil loss) during a 30 minute flow event in large scale testing.

For TRMs containing degradable components, all property values must be obtained on the non-degradable portion of the matting alone.”